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(54) **VACCINATION OF COMPANION ANIMALS TO ELICIT A PROTECTIVE IMMUNE RESPONSE AGAINST TICK INFESTATIONS AND TICK-BORNE PATHOGEN TRANSMISSION**

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(58) **Field of Classification Search**
 None
 See application file for complete search history.

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(57) **ABSTRACT**

Compositions of either the aquaporin protein from the cattle tick, *Rhipicephalus microplus*, or a nucleic acid construct incorporating a nucleic acid sequence encoding this aquaporin protein, are effective for eliciting a protective immune response against other tick species in non-bovine animals. The *R. microplus* aquaporin protein is antigenic and can be administered as a protein vaccine, or in the alternative, the nucleic acid construct can be utilized as a DNA vaccine. Induction of the immune response significantly reduces or eliminates the infestation of treated, non-bovine animals with ticks other than the cattle tick, particularly the brown dog tick, *Rhipicephalus sanguineus*. Moreover, as ticks are vectors of a variety of pathogenic agents, the reduction in the incidence of tick infestation afforded by the vaccines may concurrently reduce the incidence of diseases caused by these pathogenic agents in susceptible animals.

10 Claims, 5 Drawing Sheets